

**IN THE UNITED STATES DISTRICT COURT  
FOR THE MIDDLE DISTRICT OF PENNSYLVANIA**

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RANDY E. RAGER, Individually  
and as Co-Administrator of the  
Estate of DAMEN RAGER,  
deceased, and  
TAMMY RAGER, Individually and  
as Co-Administrator of the Estate of  
DAMEN RAGER, deceased, and as  
Administrator of the Estate of  
CAMREN M. RAGER, deceased,  
and  
STATE FARM FIRE AND  
CASUALTY CO. a/s/o Randy E.  
Rager and Tammy Rager,

Plaintiffs,

v.

GENERAL ELECTRIC COMPANY  
Defendant

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**PLAINTIFFS' MEMORANDUM OF LAW IN OPPOSITION  
TO DEFENDANT'S MOTION TO PRECLUDE  
THE OPINION TESTIMONY OF RONALD PARSONS**

FELDMAN, SHEPHERD, WOHLGELERNTER  
TANNER, WEINSTOCK & DODIG

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*Whirlpool Corp. v. Camacho*, 298 S.W.3d 631 (Tex. 2009). . . . . 32, 33, 34

## INTRODUCTION

The National Fire Protection Association (“NFPA”) reports that in 2006, the year of the fire in the Ragers’ home, there were an estimated 17,700 home structure fires involving clothes dryers and washing machine resulting in 360 injuries and \$194 million in direct property damage; clothes dryers accounted for 92% (16,284) of those fires.<sup>1</sup> The statistics have changed little over the years. In 1998, there were an estimated 15,600 clothes dryer fires resulting in 20 deaths, 370 injuries and \$75.4 million in property damage.<sup>2</sup> It is, therefore, absurd for General Electric to suggest in its Introduction that dryers “do not cause fires.”

General Electric’s assertion that the ignition of lint by the electric heater coils is a “novel theory” is also incorrect. That theory was specifically tested and confirmed by the Consumer Product Safety Commission in a lengthy report published in May of 2003. Moreover, General Electric has received dozens of reports from engineers and fire origin experts across the country, over a period of at least 20 years, attributing dryer fires to the ignition of lint in the manner described by Plaintiffs’

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<sup>1</sup> *Home Fires Involving Clothes Dryers and Washing Machines*, John R. Hall, Jr., NFPA, Quincy, MA. March 2009, Exhibit “A”.

<sup>2</sup> US Consumer Product Safety Commission Final Report on Electric Clothes Dryers and Lint Ignition Characteristics, citing Mah, J., “Table 1, Estimated Residential Structure Fires Selected Equipment 1998” *1998 Residential Fire Loss Estimates*, Directorate for Epidemiology, US Consumer Product Safety Commission, 1998.

experts in the instant case. In a 2008 report, an expert retained by dryer manufacturer Electrolux offered the same lint ignition theory as the explanation for a fire in an Electrolux dryer. And in 2001, the U.S. District Court for the District of Connecticut permitted an expert by the name of John P. Machnicki to offer the same opinion offered by Mr. Parsons and Mr. Jones: G.E. electric clothes dryers are defective in design because they permit lint to accumulate around the heater coil where the lint can ignite, causing the clothes in the dryer drum to ignite. *Travelers Property & Casualty Corp. v. General Electric Co.*, 150 F.Supp.2d 360 (D.Conn. 2001). Mr. Parsons has conducted much more extensive testing than Mr. Machnicki did ten years ago, and now offers much more compelling evidence that the design defect exists and that it can easily and feasibly be eliminated.

## **I. STATEMENT OF FACTS**

### **A. The Fire**

On Sunday, July 30, 2006, at 9:00 p.m., Mrs. Rager put a load of towels in her General Electric clothes dryer, set the timer for 60 minutes, started the dryer and closed the bi-fold doors to the laundry closet. Mrs. Rager then said good night to her boys, Camren (age 6) and Damen (age 2), closed the door to their room and went to bed at approximately 9:10 p.m. The dryer was located in a laundry closet in the middle of the second floor hallway, with the children's bedrooms at one end of the

hallway and the master bedroom at the other end of the hallway. A diagram of the second floor is attached hereto as Exhibit "B".

Shortly after 10:00 p.m. Mr. Rager awoke, opened the door to the master bedroom, and encountered thick black smoke and heat. He tried to get to his children at the opposite end of the hallway, but the smoke and heat were too intense. Mr. Rager jumped out a second story window and tried to reach his children by going up the center staircase, but encountered intense heat and smoke at the top of the stairs, where the laundry closet was located. Mr. Rager then called 911.

Police Officer Gerald Steigleman and Fire Chief Edwin Beam, Jr., were the first to arrive on the scene. Officer Steigleman entered the home with a fire extinguisher, saw smoke and flames at the top of the stairs and, as he climbed the stairs, observed the fire inside the dryer, which he then hit with the fire extinguisher. In his own words: "...when I went back up the steps, you could see where something was at the very top of the steps, and on the right side you could see a circle probably about this big (indicating). It was a door of an appliance. Okay, you could see in the back of it, it was just all glow. It was a real glow, and I hit that several times with the fire extinguisher...." Deposition of Gerald Steigleman, Exhibit "C" at 12-13.

Chief Beam testified that "we got up the stairs in the front and we were met by a wall of fire, heat, and heavy smoke." Deposition of Edwin Beam, Jr. Exhibit "D" at 19. Asked to describe where he saw the flames as he came up the stairs, Chief

Beam stated: "Straight ahead. And as a learned afterwards, that was the area where the washer and dryer were located." Deposition of Edwin Beam, Jr. Exhibit "D" at 26-27.

State Fire Marshal Karl Schmidhamer conducted a cursory investigation and concluded that the fire started in the laundry closet. He explained at his deposition:

Q. Did you consider the clothes dryer to be the possible ignition source?

A. I did.

Q. Did you rule that out as the ignition source?

A. No.

Q. Okay. Did you identify any other potential ignition sources other than the dryer?

A. No.

Deposition of Karl Schmidhamer, Exhibit "E" at 50.

#### **B. Fire Scene Investigation by Other Experts**

Four experts conducted inspections of the fire scene, two for Plaintiffs and two for General Electric. Plaintiffs' first expert, Robert Buckley, has nearly 40 years of experience as a fire cause and origin investigator, has conducted in excess of 7,000 investigations, and served for eight years as Assistant Fire Marshal for the City of Philadelphia Fire Department. In a comprehensive analysis conducted in accordance with the scientific method outlined in NFPA 921, Mr. Buckley concluded that: "1. The Fire originated inside the dryer located on the second floor in the laundry closet.

2. All fire scenarios with the exception of the fire originating in the dryer were rejected based on the data collected and evaluated.” See Expert Report and Curriculum Vitae of Robert C. Buckley, attached hereto as Exhibit “F”.

Plaintiffs’ second expert, Randolph W. Marshall, P.E., has an electrical engineering degree and nearly 15 years of forensic experience. Mr. Marshall examined the fire scene and the dryer itself for indications of electrical activity. He concluded in his report that: “1. The General Electric clothes dryer caused the fire at the area of fire origin. 2. The General Electric clothes dryer was in operation at the time of the fire as the wide spread evidence of electrical activity can only occur if the dryer is running. 3. I have considered and ruled out all other potential electrical causes of this fire.” See Expert Report of Randolph W. Marshall, P.E., attached hereto as Exhibit “G”.

Raymond Taylor and John Olsen examined the fire scene for General Electric, which later retained a third expert, Donald Hoffmann, Ph.D., P.E. Significantly, not one of General Electric’s three experts has identified the cause or ignition source for the Rager fire, although they have all conveniently reported that it was not the dryer. Dr. Hoffmann was asked at his deposition:

Q. Do you have an opinion as to the cause of the fire?

A. Right now my opinion as to cause is undetermined.

*Deposition of Donald Hoffmann, Ph.D., P.E., Exhibit “H” at 7.*

Mr. Taylor was asked at his deposition:

Q. Do you have an opinion, sir, as to the cause of the Rager fire?

A. No, I don't.

*Deposition of Raymond Taylor, Exhibit "I" at 93.*

And Mr. Olsen was asked at his deposition:

Q. You have no opinion as to what caused or even what most likely caused this fire; is that fair?

A. Something that was not related to the dryer. There is no dryer scenario that fits this fire.

Q. I know you have opinions as to what didn't cause it. That wasn't my question. Do you have any opinion as to the cause or even the most likely cause of this fire?

A. A specific cause, I don't know.

*Deposition of John W. Olsen, P.E., Exhibit "J" at 142.*

## **II. STATEMENT OF QUESTION PRESENTED**

Are the fire cause and origin opinion of Ronald Parsons admissible under Fed.R.Evid. 702 where Mr. Parsons has followed the methodology for fire investigation set forth in NFPA 921, and has independently tested and confirmed his opinions?

### **III. LEGAL ARGUMENT**

#### **A. Standard of Review**

In the matter of *Hoang v. Funai Corporation, Inc.*, 652 F.Supp.2d 564 (M.D.Pa. 2009), this Honorable Court considered a motion made pursuant to Rule 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, to preclude the expert testimony of a fire cause and origin expert, and defined the standard of review, which is also applicable to the instant motion:

The Supreme Court has held that the trial court has “a special obligation” to ensure that any and all expert testimony is not only relevant but reliable. *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 147, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999) (quoting *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993)). This special obligation has been likened to a “gatekeeping role” for the trial judge. *Daubert*, 509 U.S. at 597, 113 S.Ct. 2786. Accordingly, the admission of scientific, technical, or other specialized knowledge is within the discretion of the district court. *General Elec. Co. v. Joiner*, 522 U.S. 136, 146-47, 118 S.Ct. 512, 139 L.Ed.2d 508 (1997).

This inquiry is controlled by Rule 702 of the Federal Rules of Evidence, which provides:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed.R.Evid. 702. As the Third Circuit has explained, these requirements represent the “trilogy of restrictions on expert testimony: qualification, reliability and fit.” *Calhoun v. Yamaha Motor Corp. U.S.A.*, 350 F.3d 316, 321 (3d Cir.2003) (citing *Schneider v. Fried*, 320 F.3d 396, 405 (3d Cir.2003)).

*Hoang v. Funai Corporation, Inc., supra*, 652 F.Supp.2d at 566.

When reviewing these factors, courts have recognized that, “. . . the evidentiary requirement of reliability is lower than the merit standard of correctness,” and the standard for determining scientific reliability by a trial court has been described as “not that high.” *In re Paoli Railroad Yard PCB Litigation*, 35 F.3d 717, 744-745 (3d Cir. 1994). The Federal Rules of Evidence “embody a strong and undeniable preference for admitting any evidence which has the potential for assisting the trier of fact.” *Kannankeril v. Terminix International, Inc.*, 128 F.3d 802, 809 (3d. Cir. 1997).

## **B. Mr. Parsons’ Expert Report**

Mr. Parsons prepared a 106 page expert report documenting his investigation of the fire at the Ragers’ home on July 30, 2006. *See Expert Report of Ron Parsons*, Exhibit “K”. His report describes at length how his investigation was guided by NFPA 921. This Honorable Court, and many others, have recognized “that NFPA 921 offers a comprehensive and detailed treatment for fire investigation and have held its methodology reliable for purposes of Rule 702.” *Hoang v. Funai Corporation, Inc., supra*, citing *Booth v. Black & Decker, Inc.*, 166 F.Supp.2d 215, 220 (E.D.Pa. 2001).

Mr. Parsons meticulously followed the methodology set forth in NFPA 921. As prescribed by Section 17.1.2, Mr. Parsons first conducted an origin analysis during which he considered: 1) Fire Patterns - The physical marks left by the fire; 2) Witness Information - The observations reported by persons who witnessed the fire or who were aware of conditions present at the time of the fire; 3) Fire Dynamics - The analysis of the physics and chemistry of fire initiation, development and growth as an instrument to relate known or hypothesized fire conditions capable of producing these conditions; and 4) Arc Mapping - Noting the locations where electrical arcing has caused damage to the electrical circuits involved. His report describes at length how each of these factors led him to conclude that the fire originated at the General Electric dryer.

As prescribed by NFPA 921 Section 18.1.2, Mr. Parsons then moved on to a fire cause analysis. As he explained in his report,

The determination of the cause of a fire requires the identification of those materials, circumstances and factors that were necessary for the fire to have occurred. Those materials, circumstances and factors include, but are not limited to, the device, appliance or equipment involved in the ignition, the presence of a competent ignition source, the type and form of the material first ignited, and the failures, circumstances or human actions that allowed the materials, circumstances and factors to come together to allow the fire to occur.

*Expert Report of Ronald Parsons, Exhibit "K" at 32.*

Mr. Parsons describes at length in his report how his inspection of the dryer showed that the fire originated at the rear heat source (electric heating element). The first fuel ignited was the lint and other combustible particulate that collects in the area behind the drum. This burning lint ignited secondary fuels in the dryer, including the clothing load, the plastic components of the dryer, and the lint accumulated in the air path downstream of the drum. Mr. Parsons also described at length in his report how all other possible sources of ignition were carefully considered and eliminated.

### **C. Challenges**

#### **1. Qualifications**

General Electric attacks and belittles Mr. Parsons' qualifications in its Introduction and Statement of Facts, but offers no legal argument that he is unqualified to render opinions as to the cause of the Rager fire. In fact, Mr. Parsons is one of the most experienced fire investigators in the country with specialized knowledge regarding the design and operation of clothes dryers. Mr. Parsons has investigated hundreds of dryer fires over the course of 25 years as a fire investigator for the Wright Group, based in Uxbridge, Massachusetts. He is certified by the National Association of Fire Investigators as a Fire & Explosion Investigator and as an Instructor and has been a teacher and guest speaker on the subject of appliance fires for the International Association of Arson Investigators and various insurance companies. General Electric incorrectly states that "The vast majority of Parsons

work for the last 31 years has been consulting in litigation matters.” *Defendant’s Memorandum* at 4. In fact, Mr. Parsons estimates that he conducts approximately 100 fire cause and origin investigations annually, and that less than 5% of those cases result in litigation.

Since 2003, Mr. Parsons has dedicated hundreds of hours to the study and testing of clothes dryers, the ignition of lint within clothes dryers, and the development of safer alternative designs. As will be described and demonstrated at length herein, Mr. Parsons has conducted objective tests, all captured on video tape, which prove that the electric heater coils do ignite lint and that the airflow within the dryer draws the burning lint into the drum where it will ignite a tumbling load of cotton towels, as it did in the Ragers’ home on the night of July 30, 2006.

There is no legal or other requirement that Mr. Parsons have an engineering degree. The NFPA standard for professional fire investigators provides: “The fire investigator shall have a high school diploma or equivalent.” N.F.P.A. 1033 §1.3.2. The Federal Rules of Evidence provide that a witness may be qualified as an expert “by knowledge, skill, experience, training, or education.” Fed.R.Evid. 702. Mr. Parsons has acquired knowledge, skill, experience and training both through seminars and courses dedicated to fire cause and origin investigation, and through hands on experience testing dryers in his state-of- the-art facility in Massachusetts.

## **2. General Acceptance and Publication**

General Electric challenges Mr. Parsons' conclusions as unreliable due to the 'Lack of Publication or General Acceptance.' *Defendant's Memorandum* at 9. In fact, Mr. Parsons' opinion is not novel or new and has been the subject of numerous engineering reports, a lengthy government report prepared by the Consumer Product Safety Commission in 2003, and an opinion by the United States District Court for the District of Connecticut.

It is important to note that peer review and general acceptance are not prerequisites to admissibility. The Third Circuit recently considered the importance of peer review and general acceptance in the application of Rule 702, and reversed the decision of a Magistrate Judge from the Eastern District of Pennsylvania who had excluded testimony of an expert, explaining:

... expert testimony does not have to obtain general acceptance or be subject to peer review to be admitted under Rule 702. Indeed, in *Daubert*, the Supreme Court specifically held that Rule 702 overruled the requirement that an opinion must gain general acceptance in order to qualify as admissible expert testimony; instead general acceptance and peer review are only two of the factors that a district court should consider when acting as gate-keeper. (Citations omitted). ... Where there are other factors that demonstrate the reliability of the expert's methodology, an expert opinion should not be excluded simply because there is no literature on point.

*Schneider v. Fried, D.O.*, 320 F.3d 396, 404 (3d. Cir. 2003).

Contrary to GE's assertions, there is general acceptance of the lint ignition theory in the fire investigation community. For at least the past 20 years, General Electric has received written reports from engineers and fire cause and origin experts all over the country describing fires in GE dryers caused by the very same design defect Mr. Parsons has described in the instant case. *See, e.g., 12 Corroborating Expert Reports*, Exhibit "L". The conclusions in these reports by engineers across the country reflect general acceptance of Mr. Parsons' lint ignition theory:

- In an engineering report dated July 23, 1990, Edward J. Jensen, P.E. of ADTEST Engineering, Inc. in Texas, opined: "The lint ignited in the heating coils and the air flow in the unit spread flames through the heat diffuser into the drum. ... The existence of lint in both the heating coils and the adjacent heat diffuser compartment where the air flow would pull a fire, is a hazard. It is apparent that the design of the fire damaged Hotpoint clothes dryer [manufactured by GE] is unsafe."
- In a report dated November 17, 1990, Billy D. Sadler of Sadler & Associates in Ohio opined: "It is therefore our opinion that the cause of the fire was a defective GE Hotpoint Electric clothes dryer. The defect is in the design that the inlet air can pick-up lint and take it past red hot coils where it glowed red (1200 degrees F.) and into the drum area."
- In a report dated February 17, 1992, Peter S. Vallas of Peter Vallas Associates, Inc. in New Jersey described: "heavy accumulation of lint within the heater coil enclosure which allowed the lint to accumulate within the heater housing area, which subsequently caused the ignition of this accumulated lint." He opined: "The design of the current assembly allows for lint to accumulate within all areas of the internal dryer components, which is a fire hazard and should be addressed by the General Electric Corporation. The physical evidence of lint located in the heater assembly indicates a design flaw...."
- In a report dated March 26, 1993, Dennis J. Balfe of GAI Forensic Engineers in Massachusetts, opined: "the origin of this loss was the subject electric clothes dryer, and the cause was the ignition of lint on, and/or near, the electrical resistance heating elements. The design of the

- subject electric clothes dryer is defective. Any lint accumulation within the enclosure can be drafted into the heater shroud and be ignited.”
- In an engineering report dated May 16, 1994, Frederick E. Grim, P.E. of Tennessee opined: “This fire was the result of the ignition of lint circulating within the cabinet and ignited by the heating elements.... The burning ling then deposited on the clothing in the drum. By design, aair is drawn from the interior of the cabinet, past the heating elements, through the drum and filter by a blower. It is normal for lint to accumulate in the cabinet as shown in Figure 9. There is no access provided for the user to easily inspect or clean this area. The design of the dryer contains no positive method of excluding lint from contact with the heating elements making this type of fire possible.”
- In a report dated February 7, 1995, Robert McLaughlin of Florida reported: “According to the fire department report the cause and origin was the dryer. ... The conclusion was that the fire originated in the dryer in the lint built up over the life of the dryer. The fire was ignited by the electric heating coils and drawn into the dryer.”
- In a report dated May 1, 1996, Eugene W. Bartel, Ph.D., P.E. of Association of Consultant Engineers in Atlanta, Georgia, opined: “Since no intake screen to the heating elements is utilized, and debris (lint) entrained in the flow of intake air is drafted into the heating elements and will be readily ignited upon contact with the hot element surface. ... the April 5, 1996 fire... was the result of ignition of lint by the heating elements that extended the fire to the clothes in the dryer drum.”
- In a report dated February 27, 1997, Jerry R. Carter, CFI, of Tennessee conducted a fire cause analysis and concluded: “The fire was caused by lint coming into contact with the heating coils that are located at the rear of the dryer drum assembly. The ignited lint was drawn into the dryer drum where the subsequent ignition and burning of the towels occurred. ... There is a potential that subrogation may exists against the manufacturer of the dryer for a failure to warn that a build-up of lint at the interior of the dryer cabinet should be removed to prevent a fire hazard.”
- In a report relative to a fire in 1998, Aaron Redsicker, CFEI of Peter Vallas Associates, Inc. in New Jersey opined: “Based on the laboratory analysis, it is the opinion of this organization that the subject fire occurrence originates as a result of a combustible lint material accumulation with in the electric coil area at the base, eventually building up to such a point that contact had been made with the hot

coils, and there was sufficient amount of lint build-up at this location to continue burning and eventually ignite the clothing material inside the drum.”

- In an engineering report dated March 26, 1998, Kenneth R. McLauchlan, P.E. of Maryland opined: “The fire at the subject dryer was most probably caused by ignition of combustible clothing in the dryer. The clothing was ignited when a section of accumulated lint in the dryer casing entered the heater air inlet. The lint was ignited by the electric resistance heater and traveled into the drum, where it ignited the clothing. ... The lint that caused the fire accumulated in an area in the dryer which could not be accessed for cleaning by the homeowner. There were no warnings on the casing that the dryer needed to be disassembled for lint removal.”
- In an engineering report dated August 21, 1998, J.L. Montgomery, P.E. of Texas opined: “The spent air discharge ducting and/or air bypassing the lint filter copiously leaked lint into the interior of the dryer enclosure. From there it was entrained in the air sucked into the heating coils, and contacted the coils. The heat of the coils ignited the lint. The combustion of the lint spread into the drum where the contents partially combusted.”
- In an engineering report dated March 2, 1999, Dr. Norman A. Cope, P.E. of North Carolina opined: “The fire was caused by ignition of lint buildup located in the inaccessible cavities of the electric resistance heating coil enclosure and the heat diffuser attached to the back of the tumbler. ... Prior investigations of similar Hot Point and GE electric clothes dryers have found a similar pattern to the fire damage in this unit. That is, the lint buildup in the inaccessible cavities of the clothes dryer ignites, and this lint causes the clothes in the tumbler to ignite and burn. The design and construction of this electric clothes dryer contributes to the excessive number of fires occurring in this type of dryer. That is, lint can build up in the inaccessible locations of the heater enclosure, and the air diffuser that is attached to the back of the tumbler.”

General Electric’s corporate designee conceded at his deposition in this case that General Electric has been receiving these engineering reports since at least 1990:

Q. And from time to time, I'm sure you would agree that you

received reports, written reports from engineers or fire investigators around the country who told you specifically that they believed lint, that it accumulated inside the dryer, had been ignited and drawn into the drum?

A. I have seen that allegation.

Q. And you saw that allegation going back to as early as 1990 or earlier, correct?

A. I don't know about the earlier. The back to 1990 I know, yes.

*Deposition of Ronald Johnson, P.E., Exhibit "M" at 108.*

In a report dated November 21, 2008, Terry D. Beckham, an expert retained by dryer manufacturer Electrolux, acknowledged that burning lint will be drawn through the air into the drum where it will ignite clothing in the drum. Although the dryer at issue was gas rather than electric, his conclusions further reflect general acceptance of Mr. Parsons' theory. Mr. Beckham opined:

When lint accumulates within the burner chamber it will ignite when the burner operates and the natural air flow within the dryer will pull fire and the burning lint into the heater pan where more lint will ignite and the resulting fire will then be pulled into the dryer drum.

Expert Report of Terry D. Beckham, Exhibit "N" at 5.

Mr. Parsons' opinions are also consistent with conclusions published by the CPSC. In the CPSC's Final Report on Electric Clothes Dryers and Lint Ignition Characteristics, May 2003, the safety commission's scientists conducted tests to evaluate the accumulation of lint within a dryer, and reached the same conclusion as

Mr. Parsons:

Lint begins to accumulate inside a dryer chassis upon first use. Lint accumulates on the dryer's components, including the heater and the dryer floor. The accumulation occurs even when the dryer's lint screen has been cleaned after each usage, and the dryer is properly exhausted.

*Final Report on Electric Clothes Dryers and Lint Ignition Characteristics, May 2003*, Exhibit "O" at iv. The report continues: "Lint accumulating near the heater intake can ignite before the high-limit thermostat switches the heater element off." *Final Report on Electric Clothes Dryers and Lint Ignition Characteristics, May 2003*, Exhibit "O" at v. The CPSC report further concluded that "Lint ingested by the heater and embers expelled from the heater outlet can easily ignite additional lint or fabric in the airstream, resulting in additional embers in the dryer system and exhaust vent." *Final Report on Electric Clothes Dryers and Lint Ignition Characteristics, May 2003*, Exhibit "O" at v.

General Electric also neglected to advise the Court in its Memorandum that it has previously raised a *Daubert* challenge to the lint ignition theory, and that the U.S. District Court for the District of Connecticut denied GE's motion to preclude an expert with the same design defect theory espoused by Mr. Parsons. In that case, John P. Machnicki, Director of Travelers Property & Casualty's Loss Prevention and Engineering Laboratory, wrote an expert report in which he opined that "the design of the GE dryer permits the accumulation of lint behind the dryer drum in an area

undetectable to the homeowner" and that "the lint that accumulates in this area can be ignited by the dryer's heating elements that are located in close proximity to the rear of the drum, thereby causing a fire." *Travelers Property & Casualty Corp. v. General Electric Co.*, 150 F.Supp.2d 360, 362 (D.Conn. 2001). The Court held that Machnicki's opinion "is admissible under Rule 702 and *Daubert...*" *Id.* at 367.

In this section of its Memorandum, General Electric also refers to the fact that UL has "promulgated a dryer design standard, which recognizes the safety of the GE design." *Defendant's Memorandum* at 9. GE neglects to explain that the UL standard does not address the long term operation of a dryer or the effects of lint accumulation over time; it pertains only to the function of new dryers. In fact, the text of the applicable UL standard provides: "A product which complies with the text of this standard will not necessarily be judged to comply with the standard if, when examined and tested, it is found to have other features, which impair the level of safety contemplated by these requirements." UL 2158. Moreover, the Consumer Product Safety Commission issued a letter to Underwriters Laboratory on May 30, 2003, proposing additional requirements to be included in their dryer standard, including "Requirement to prevent embers from entering into the tumbler." CPSC Letter of May 30, 2003, Exhibit "P" at 3, item 6. Furthermore, General Electric's own engineering expert in this case concedes that compliance with a UL standard does not mean that a product is incapable of causing a fire:

Q. And generally speaking, would you agree with me that a product that receives approval from Underwriters Laboratory is not necessarily free from defects nor incapable of causing fires?

A. Well, I would agree that they're not incapable of causing fires.

*Deposition of Donald Hoffmann, Ph.D., P.E. , Exhibit "H" at 34.*

### **3. Support in Testing**

General Electric next suggests that there is a lack of testing to support the elements of Mr. Parsons' lint ignition theory. In fact, there is ample support for each element of his theory, as discussed below.

#### **i. Accumulation of Lint Within a GE Dryer**

Mr. Parsons has opined that "the design of the dryer actually promotes the build-up of the combustible material (dryer lint) within close proximity of a competent ignition source (electric heat source). The build-up of this combustible lint is continuous and unabated since the user of the dryer is not provided with any means to keep this area clean." *Parson Expert Report*, Exhibit "K" at 5. His opinion, based upon personal observations and measurements, is scientifically reliable, and corroborated by several sources. First, General Electric's own engineer conceded at deposition that lint accumulates inside the cabinet of a dryer where the consumer cannot see it and is not expected to clean it. Ronald Johnson, P.E., who has worked

for G.E. for more than 40 years and became General Electric's senior engineer in dryer design in 1989, testified as GE's corporate designee in this case as follows:

Q. You would agree with me then, going back to my original question, General Electric has known that lint accumulates within the dryer cabinet in areas where General Electric does not expect the consumer to clean lint?

A. I agree with that statement.

Q. And that includes the accumulation of lint within the cabinet on the floor of the dryer, the base of the dryer, right?

A. That is correct.

Q. And that includes the area around the heater housing, and the heat deflector, right, lint accumulates in those places, right?

A. Lint accumulates in those places.

Q. Okay.

A. I have seen lint accumulate in those places.

*Deposition of Ronald Johnson, P.E., Exhibit "M" at 41.*

Second, the CPSC conducted its own tests to evaluate the accumulation of lint within a dryer, and reached the same conclusion in 2003 in its Final Report on Electric Clothes Dryers and Lint Ignition Characteristics:

Lint begins to accumulate inside a dryer chassis upon first use. Lint accumulates on the dryer's components, including the heater and the dryer floor. The accumulation occurs even when the dryer's lint screen has been cleaned after each usage, and the dryer is properly exhausted.

*Final Report on Electric Clothes Dryers and Lint Ignition Characteristics, May 2003,*

Exhibit "O" at iv.

Mr. Parsons has examined dozens of dryers that were subject to ordinary household use and has photographed and measured the lint that accumulates inside them. He has devoted ten pages of his report to a description of his observations, with color photographs, at pages 46-56. See Exhibit "K".

GE's own retained experts have conceded that lint accumulates inside the dryer cabinet, around the heater housing, and on the heat deflector. For example, Raymond Taylor, P.E. testified as follows:

- Q. Would you agree with me that, generally speaking, lint begins to accumulate inside a dryer the first time that dryer is used?
- A. I would expect it starts at Day 1.
- Q. Would you agree with me that lint accumulates in a GE electric dryer in the area of the housing of the heater coil?
- A. It can -- yes, it accumulates in an area of the heater coil.
- Q. Would you agree with me that lint can accumulate on the deflector itself?
- A. Yes.
- Q. You've seen that, have you not?
- A. Yes.
- Q. And this accumulation can take place even when the dryer's lint screen has been cleaned properly after each usage, correct?
- A. Yes, sir.

*Deposition of Raymond Taylor, P.E., Exhibit "I" at 63-64.*

NFPA 921 also recognizes the dangers associated with lint collection inside clothes dryers. Section 24.6.13.1 of NFPA 921 provides: "Most dryers have filters

to trap lint, which can build up in the dryer. However, if the trap is clogged or not working or if the material being dried gives off a large quantity of lint, this material can accumulate in other areas of the dryer and its vent, which can be a fire hazard.”

NFPA 921 § 24.6.13.1.

**ii. Ignition of Lint Inside the Dryer**

Mr. Parsons next opines that the lint that accumulates over time inside a dryer will “become ignited when it contacts the energized heating element.” Defense counsel argues that this opinion is unreliable, but GE’s own experts concede that Mr. Parsons is correct and that they have seen evidence of lint ignited by the heating element. Raymond Taylor, P.E. testified at his deposition as follows:

Q. During the ordinary and typical use of a GE electric dryer, do you believe it’s possible that lint can come into contact with the heater coils?

A. It’s possible for a small amount.

Q. And if that, what you characterize as a small amount, comes into contact with the heater coils during the regular and ordinary use of this GE dryer, that what you characterize as a small amount of lint will ignite, is that correct?

A. It can ignite, yes.

Q. Have you seen that happen or have you seen evidence that that has happened?

A. I’ve seen evidence that it has happened.

*Deposition of Raymond Taylor, P.E., Exhibit “I” at 64-65.*

In the CPSC’s Final Report on Electric Clothes Dryers and Lint Ignition Characteristics, May 2003, the safety commission’s scientists concluded that “Lint

accumulating near the heater intake can ignite before the high-limit thermostat switches the heater element off.” *Final Report on Electric Clothes Dryers and Lint Ignition Characteristics, May 2003*, Exhibit “O” at v.

Mr. Parsons’ opinion on this issue is scientifically reliable. General Electric’s dryer design engineer, Ron Johnson, has testified that the energized heater coils in a GE Electric Dryer range in temperature from 1200° F to 1700° F. *See Deposition of Ronald Johnson, 4/25/00*, Exhibit “Q” at 139. Numerous published reference materials establish the ignition temperature of cotton is between 500° F and 650° F. *See, e.g., The Fire Protection Handbook, 18<sup>th</sup> Edition*, Exhibit “R”. Mr. Parsons has confirmed through his own testing and personal observations in the field that cotton lint ignites when it comes in contact with the energized heater coil. As he explains in his expert report:

Examination of some of the used dryers manufactured by GE, purchased strictly for use as exemplars to demonstrate internal lint accumulations, were found to have evidence of localized heating and/or charred lint from small fires that were never discovered by the users. In addition, the burned dryers we have inspected as part of Origin & Cause investigations range from very minor to very major damage. These dryers have also contributed to our evaluations as to lint accumulations, fire growth and development, fire containment and spread, potential ignition scenarios....

In electric dryers, both burned and unburned, burned lint has been observed at the lower portion of the heater housing and within the heating element on electric dryers.

*Expert Report of Ronald Parsons*, Exhibit “K” at 55-56. See also, photographs at 50-51.

**iii. Lint Ignited By the Heater Coil Can Ignite Other Accumulated Lint and the Clothes in the Drum**

Extensive testing and field analysis conducted by Mr. Parsons, and many others, confirms that when lint falls on the heater coil and ignites, the natural airflow within the dryer draws the burning embers into the heat deflector where additional accumulated lint ignites, and into the drum, where a load of turning clothes will also ignite. General Electric has not accurately portrayed the testing conducted by Mr. Parsons and has ignored the overwhelming body of evidence that supports Mr. Parsons’ lint ignition theory.

The component known as the “heat deflector” is located behind the drum of GE Electric dryers, between the drum and the heating coils. It has eight large holes through which heated air, and lint, is drawn to the rear of the drum. GE’s design of this component permits lint to collect in extraordinary quantities around the circumference of the deflector. Mr. Parsons has examined hundreds of GE dryers and has documented this lint collection with photographs produced in this litigation. See, e.g., *Expert Report of Ronald Parsons*, Exhibit “K” at 52-55. Significantly, Mr. Parsons’ alternative design eliminates this component and thereby eliminates the

potential for lint to accumulate and ignite behind the drum.

Mr. Parsons has conducted comprehensive testing over a period of 7 years that proves that lint ignited by the heating element will ignite lint that has collected in the deflector on the back of the drum, just inches away. His testing also proves that ignited lint will be drawn into the drum where it will ignite a load of towels, as it did in the Ragers' dryer. General Electric attacks the tests performed by Mr. Parsons in 2010, but completely ignores the numerous prior tests in which Mr. Parsons proved his theory. For example, in a test conducted on December 2, 2008, and videotaped from nine different locations inside and outside the dryer, a tenth of a gram of lint falling on the heater coils ignited and the burning embers then ignited lint in the deflector and towels turning in the drum. Defendant's Memorandum makes no reference to this testing. Mr. Parsons performed a similar test in November of 2009, carefully documented in photographs and on videotape, in which lint ignited by the heater coil ignited a turning load of towels. Again, Defendant's Memorandum makes no reference to this testing, all of which has been produced in this litigation. Video of Mr. Parsons' testing can be produced in digital format in the event the Court wishes to review it.

Instead, General Electric argues in its motion that Mr. Parsons "jammed wads of lint directly onto the heating coils." *Defendant's Memorandum* at 11. In fact, the amount of lint used by Mr. Parsons, a tenth of a gram, is the size of a #2 pencil eraser

and is smaller than the amount of lint Mr. Parsons has personally observed around the heater housing of dryers in the field and inside the Ragers' dryer. As set forth above, GE's own experts concede that lint accumulates in this area and drops onto the heater coil, so there is nothing controversial or unscientific about Mr. Parsons' testing, which demonstrates what happens inside the dryer after the lint ignites on the heater coil.

General Electric also disputes the reliability of Mr. Parsons' "Test #2" in which Mr. Parsons simulated the accumulation of lint in the deflector by placing 71.5 grams of lint in that location. General Electric argues that "this is dramatically more material than could ever be expected to accumulate on a dryer's deflector through regular use." *Defendant's Memorandum* at 14. In fact, Mr. Parsons has measured and weighed the lint that he has found in exemplar dryers and has determined that it is not at all unusual to find 71.5 grams of lint in the deflector. Below are photographs taken by Mr. Parsons of four exemplar dryers in which he found that amount of lint accumulated in a deflector:



General Electric next argues that in Test #3 Mr. Parsons “abandoned any pretense of trying to support a lint ignition scenario.” This is an absurd misstatement of the facts. The purpose of Test #3 in March of 2010 was to show how fire will propagate from the drum to the adjacent bi-fold doors, which will then fall and burn the carpet outside the dryer closet, as occurred in the Ragers’ home. Mr. Parsons explained this to defense counsel at his deposition:

Q. You were just testing to see that if you had a drum load fire could

it come outside of the dryer?

A. Exactly.

Q. And I assume you used the same drum load of towels?

A. Yes, sir.

*Deposition of Ronald Parsons, Exhibit "S" at 137.*

The fact that Mr. Parsons used a propane torch to ignite the load of towels does not invalidate the test or his theory. In fact, GE's own experts artificially ignited drum fires in their testing as well. They chose to use gasoline instead of a propane torch, but the result was the same: a burning load of towels. Mr. Parsons' test was designed to determine whether a turning load of burning towels will self-extinguish, or whether they will continue to burn, resulting in a fire that will escape from the dryer, igniting adjacent structures. In Mr. Parsons' test, the fire continued to burn, the door of the dryer opened, and the adjacent bi-fold doors caught fire, just as they did in the Ragers' home. Video of Mr. Parsons' testing can be produced in digital format for review by the Court.

#### **4. Life Testing by Whirlpool**

General Electric argues that life testing of GE dryers by its competitor, Whirlpool, refutes Mr. Parsons' lint ignition theory because Whirlpool's lab "never had a General Electric drum fire due to lint." *Defendant's Memorandum* at 20. Mr. Taylor, who supervised that testing more than 20 years ago, between 1971 and 1988, admits that there is no documentation of the results:

Q. But in terms of the procedures and the log sheets and things that applied to the GE dryers which you say were tested that were of the same key design features as the Rager dryer, there's no way you can produce that information or show us exactly what was observed, what was found, or what sort of testing or evaluation was done, is that fair?

A. I don't believe those documents exist.

*Deposition of Raymond Taylor*, Exhibit "I" at 20-21. Mr. Taylor's testimony with regard to life testing by Whirlpool is, therefore, unreliable and inadmissible and Plaintiffs will address this issue by way of Motion in Limine prior to trial.

##### **5. Mr. Parsons' Lint Ignition Theory Fits the Rager Fire**

Finally, General Electric argues the Mr. Parsons' theory does not fit the facts of this case. In fact, everything known about the fire in the Ragers' dryer suggests that it was caused by lint ignition, and General Electric's experts have been unable to identify any other cause. First, the fact that the dryer had been in continuous use for 11 years means that lint accumulated inside the cabinet for a lengthy period of time. The fact that Mr. and Mrs. Rager cleaned around the outside of the dryer, and cleaned the lint trap, is completely irrelevant. The Ragers could not see or clean behind the drum, around the heater housing, inside the deflector, or below the drum at the base of the cabinet. We know that lint accumulated in these areas because some remnants were found in the burned dryer. At Pages 20 and 21 of his expert report, Mr. Parsons noted: "An examination of the base of the dryer indicates both unburned lint

and charred lint in the base of the dryer cabinet. Additionally, there are signs of charred lint, which remains at the 6 o'clock location at the heating elements" and "the heater housing has a collection of charred lint at the 3 o'clock location."

The timing of the fire indicates that the dryer was running at the time the fire started, and the heater coils would, therefore, have been energized and capable of igniting lint. Mrs. Rager testified that she set the timer for 60 minutes and started the dryer at 9:00 p.m. Mr. Rager discovered the fire at approximately 10:15 p.m., by which time it had already been burning for a significant period of time, had escaped from the dryer and ignited the bi-fold doors, causing such intense heat that he could not walk down the hallway. This is consistent with a fire that started toward the end of the dryer's 60 minute cycle, by which time the cotton towels would have been dry and capable of supporting combustion.

Mr. Parsons found additional evidence that the dryer was running when the fire started, including:

- "there were signs of belt tracking on the idler pulley, which is consistent with the dryer operating during the initial stages of the fire." Expert Report at 21.
- "This writer did note electrical activity in the dryer, which indicates that the dryer was energized at the time of the fire. This electrical activity within the dryer can only be supported if the fire originates within the dryer while the dryer is operating." Expert Report at 104.
- "The fire patterns at the trap duct blower and vent are consistent with the dryer operating at the time of the fire. The byproducts of the combustion

were being transported through the trap duct into the blower wheel location." Expert Report at 104.

Equally important is the fact that Mr. Parsons considered and ruled out all other potential ignition sources within the dryer, as required by NFPA 921. He explained in his expert report:

This writer has ruled out other ignition sources. All other possible sources of ignition were carefully considered and eliminated. Other sources of ignition considered were:

1. Electrical ignition sources, the motor, wiring, and electrical components were examined and eliminated. There were no signs of electrical activity other than the observed electrical activity on the copper conductors. This activity is consistent with fire attack. An inspection of the electric motor indicates that there were no signs of any malfunction to the bearings.
2. Spontaneous heating was eliminated as the cause of this fire. It is clear that the dryer was operating when the fire occurred and as such any heat that would be collected in the load, as a result of spontaneous heating, will be lost by the tumbling action and the removal of the heat through the trap duct blower. The homeowner also reports that no oils were present in the load. Statement by the homeowner also indicate no oils were washed and then placed in this dryer.
3. Ignitable liquids have been ruled out. Statements by the homeowner also indicate no chemicals or ignitable liquids were washed and then placed in this dryer. Had an ignitable liquid been present in the load, it would be expected that the fire would have started early in the drying cycle rather than at the end when the vapors from the ignitable liquid would have been removed from the drying action. In addition, ignition of an ignitable liquid vapor within

the confined space of the dryer would have resulted in rapid pressure build- up that would most certainly have been heard by the witnesses. The witnesses did not hear any noises resulting in an explosion.

4. The load contents were normal and appropriate and this writer found no other materials that were susceptible to ignition from the temperatures found in this dryer during operation.

*Expert Report of Ronald Parsons*, Exhibit “K” at 104-105.

#### **D. Legal Precedent**

General Electric incorrectly asserts that the Supreme Court of Texas “excluded as unreliable the same dryer ‘lint ignition’ theory Parsons offers here.” *Defendant’s Memorandum* at 2, citing *Whirlpool Corp. v. Camacho*, 298 S.W.3d 631 (Tex. 2009). The facts of the *Camacho* case are unrelated to the Ragers’ fire and the opinions rendered by the expert in that case bear no relationship to the opinions rendered by Mr. Parsons. First, the design of the Whirlpool dryer in the *Camacho* case was completely different, with “a heater box that is mounted on the lower rear part of the dryer opposite the blower assembly.” *Id.* At 635. The Camacho’s Whirlpool dryer did not have a circular heater housing mounted behind the drum, like the GE dryer owned by the Ragers. Nor did the Camacho’s Whirlpool dryer have a circular heat deflector attached to the rear of the drum. In contrast, the Camacho’s Whirlpool dryer had a corrugated tube and the expert in that case opined that “Whirlpool’s use of a corrugated tube in the dryer’s air circulation system was a design defect.” *Id* at 634.

The Camacho's expert "testified that according to general engineering knowledge, corrugated tubing could cause lint to hang up inside the tube" but, as the Supreme Court of Texas explained, the expert "had not seen or read of a test showing that a corrugated lint transport tube in a dryer properly vented, such as the Camachos' was, would become clogged with lint to the extent it backed lint up in the blower assembly. He did not personally test his theory." *Id.*

In contrast, the build-up of lint on the heater housing, the heat deflector and the base of GE dryers is well-documented, and neither General Electric nor its experts dispute that large amounts of lint build up in these areas, even when the lint screen is cleaned after every use. Unlike the Camacho's expert, Mr. Parsons has identified compelling evidence of lint build-up in the Ragers' dryer, consistent with his theory. Heavy accumulations of lint were found in the parts of the Ragers' dryer that were not completely consumed by fire:



Mr. Parsons also found lint remnants and evidence of charred lint on the heater coils and housing:



Unlike the Camacho's expert, Mr. Parsons has personally tested every element of this theory, and can present photographic and video evidence that lint will start a fire in the manner he has described. For all of these reasons, the *Camacho* case is anapposite.

To the extent General Electric takes issue with the results of Mr. Parsons tests, these challenges are properly the subject of cross-examination and contrary expert testimony at trial. The *Daubert* Court specifically stated: “Vigorous cross-examination, presentation of contrary evidence and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Daubert*, 509 U.S. at 595; *In re Paoli R.R. Yard PCB Litig*, 35 F.3d 717, 744 (3d Cir.1994). *See, e.g.*, Advisory Committee Notes, 2000 Amendments, Fed.R.Evid.702 (“[T]he trial court’s role as gatekeeper is not intended to serve as a

replacement for the adversary system.”)(quoting *United States v. 14.38 Acres of Land Situated in Leflore County, Mississippi*, 80 F.3d 1074, 1078 95<sup>th</sup> Cir.1996).

#### **IV. CONCLUSION**

For all of the reasons set forth herein, Plaintiffs respectfully request that this Honorable Court deny Defendant’s motion to exclude the opinion testimony of Ron Parsons.

Respectfully submitted,

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